1. A method to dissipate heat generated from a source within a micro-structure, that is on a substrate, comprising:

forming a thermally conductive pedestal that extends upwards from said substrate; and

forming a layer of thermally conductive material that contacts said pedestal and extends therefrom as far as said heat source.

2. The method of claim 1 wherein said layer of thermally conductive material and said conductive pedestal have a thermal conductivity between about 100 and 400 W/m.K.

3. The method of claim 1 wherein said layer of thermally conductive material is selected from the group consisting of copper, tungsten, molybdenum, silicon, ruthenium, rhodium, iridium, and their mutual alloys.

4. The method of claim 1 wherein said layer of thermally conductive material has a thickness between about 1 and 2.5 microns.

5. The method of claim 1 wherein said pedestal has a cross-sectional area that is between about 10,000 and 15,000 sq. microns.

6. The method of claim 1 wherein said source generates heat at a rate between about

4 and 15 milliwatts.

7. A process to manufacture a magnetic write head, having an ABS, comprising:

providing a substrate and depositing thereon an undercoat;

forming a magnetic read head, sandwiched between upper and lower magnetic shield layers, on said undercoat;

on said upper magnetic shield, forming a bottom horizontal magnetic pole;

forming on said undercoat a thermally conductive pedestal that does not contact said bottom horizontal magnetic pole;

depositing a layer of insulation on all exposed surfaces and then planarizing down to the level of said bottom horizontal magnetic pole;

forming a vertical bottom magnetic pole, having a front surface that is part of the ABS, and a magnetic yoke that extends upwards from said bottom horizontal pole to a height that exceeds that of said vertical bottom pole;

forming, on said bottom horizontal magnetic pole, a write coil that surrounds said yoke;

depositing photoresist, sufficient to fully cover, and thereby electrically insulate, said write coil;

patterning said photoresist so as to leave only said pedestal uncovered;

hard baking the photoresist;

forming a layer of non-magnetic material that extends from over the vertical bottom

pole as far as said yoke, thereby forming a write gap;

forming, on said layer of non-magnetic material and on said yoke, a top magnetic pole;

depositing a layer of thermally conductive material on all exposed surfaces and then planarizing until said top magnetic pole is just exposed, thereby forming a heat diffuser that, together with said thermally conductive pedestal, provides a thermal path between said write coil and said undercoat, whereby pole protrusion due to thermal expansion is reduced; and

then depositing an overcoat onto all exposed surfaces.

8. The process recited in claim 7 wherein said write coil comprises two or more turns.

9. The process recited in claim 7 wherein said pedestal has a height of between about 100 and 125 microns.

10. The process recited in claim 7 wherein said layer of thermally conducting material is formed to have a width between about 100 and 125 microns.

11. The process recited in claim 7 wherein said layer of thermally conductive material and said conductive pedestal have a thermal conductivity between about 100 and 400 W/m.K.

12. The process recited in claim 7 wherein said layer of thermally conductive material is selected from the group consisting of copper, tungsten, molybdenum, silicon, ruthenium, rhodium, iridium, and their mutual alloys.

13. The process recited in claim 7 wherein said layer of thermally conductive material has a thickness between about 1 and 2.5 microns.

14. The process recited in claim 7 wherein said pedestal has a cross-sectional area that is between about 10,000 and 15,000 sq. microns.

15. The process recited in claim 7 wherein said write coil generates heat at a rate between about 4 and 15 milliwatts.

16. A process to manufacture a magnetic write head, having an ABS, comprising:

providing a substrate and depositing thereon an undercoat;

forming a magnetic read head, sandwiched between upper and lower magnetic shield layers, on said undercoat;

on said upper magnetic shield, forming a bottom horizontal magnetic pole;

depositing a first layer of insulation on all exposed surfaces and then planarizing down to the level of said bottom horizontal magnetic pole;

forming a vertical bottom magnetic pole, having a front surface that is part of the

ABS, and a magnetic yoke that extends upwards from said bottom horizontal pole to a height that exceeds that of said vertical bottom pole;

forming, on said bottom horizontal magnetic pole, a write coil that surrounds said yoke;

depositing photoresist, sufficient to fully cover, and thereby electrically insulate, said write coil;

patterning said photoresist so as to leave uncovered a portion of said first layer of insulation that overlies only said substrate;

hard baking the photoresist;

forming a layer of non-magnetic material that extends from over the vertical bottom pole as far as said yoke, thereby forming a write gap layer;

depositing a second layer of insulating material and then planarizing until said write gap layer is just exposed;

forming, through said first and second insulating layers, a via hole that extends as far as said undercoat;

forming, on said write gap layer and on said yoke, a top magnetic pole;

depositing a layer of thermally conductive material on all exposed surfaces, sufficient to over-fill said via hole;

then planarizing until said top magnetic pole is just exposed, thereby forming a heat diffuser that, together with said filled via hole, provides a thermal path between said write coil and said undercoat, whereby pole protrusion due to thermal expansion is reduced; and

then depositing an overcoat onto all exposed surfaces.

17. The process recited in claim 16 wherein said write coil comprises two or more turns.

18. The process recited in claim 16 wherein said via hole is formed to a depth of between about 100 and 125 microns.

19. The process recited in claim 16 wherein said layer of thermally conducting material is formed to have a width between about 100 and 125 microns.

20. The process recited in claim 16 wherein said layer of thermally conductive material has a thermal conductivity between about 100 and 400 W/m.K.

21. The process recited in claim 16 wherein said layer of thermally conductive material is selected from the group consisting of copper, tungsten, molybdenum, silicon, ruthenium, rhodium, iridium, and their mutual alloys.

22. The process recited in claim 16 wherein said layer of thermally conductive material has a thickness between about 1 and 2.5 microns.

23. The process recited in claim 16 wherein said via hole has a cross-sectional area

that is between about 10,000 and 15,000 sq. microns.

24. The process recited in claim 16 wherein said write coil generates heat at a rate between about 4 and 15 milliwatts.

25. A heat extractor for a micro-structure that includes a heat source and a substrate, comprising:

a thermally conductive pedestal that extends upwards from said substrate; and

a layer of thermally conductive material that contacts said pedestal and extends therefrom as far as said heat source.

26. The heat extractor described in claim 25 wherein said layer of thermally conductive material and said conductive pedestal have a thermal conductivity between about 100 and 400 W/m.K.

27. The heat extractor described in claim 25 wherein said layer of thermally conductive material is selected from the group consisting of copper, tungsten, molybdenum, silicon, ruthenium, rhodium, iridium, and their mutual alloys.

28. The heat extractor described in claim 25 wherein said layer of thermally conductive material has a thickness between about 1 and 2.5 microns.

29. The heat extractor described in claim 25 wherein said pedestal has a cross-sectional area that is between about 10,000 and 15,00 sq. microns.

30. A magnetic read-write head, having an ABS, comprising:

a substrate on which is an undercoat;

a magnetic read head, sandwiched between upper and lower magnetic shield layers, on said undercoat;

on said upper magnetic shield, a bottom horizontal magnetic pole;

on said undercoat a thermally conductive pedestal that does not contact said bottom horizontal magnetic pole;

a layer of insulation extending from said undercoat as far as the level of said bottom horizontal magnetic pole;

a vertical bottom magnetic pole, having a front surface that is part of the ABS, and a magnetic yoke that extends upwards from said bottom horizontal pole to a height that exceeds that of said vertical bottom pole;

on said bottom horizontal magnetic pole, a write coil that surrounds said yoke;

a layer of hard baked photoresist, fully covering said write coil and not present over said pedestal;

a write gap layer of non-magnetic material that extends from over the vertical bottom pole as far as said yoke;

on said layer of non-magnetic material and on said yoke, a top magnetic pole;

a layer of thermally conductive material that contacts said pedestal and extends therefrom as far as over said write coil, whereby there is reduced pole protrusion due to thermal expansion; and

an overcoat layer on said top magnetic pole and on said layer of thermally conductive material.

31. The read-write head described in claim 30 wherein said write coil has two or more turns.

32. The read-write head described in claim 30 wherein said pedestal has a height of between about 100 and 125 microns.

33. The read-write head described in claim 30 wherein said layer of thermally conducting material has a width between about 100 and 125 microns.

34. The read-write head described in claim 30 wherein said layer of thermally conductive material has a thermal conductivity between about 100 and 400 W/m.K.

35. The read-write head described in claim 30 wherein said layer of thermally conductive material is selected from the group consisting of copper, tungsten, molybde-num, silicon, ruthenium, rhodium, iridium, and their mutual alloys.

36. The read-write head described in claim 30 wherein said layer of thermally conductive material has a thickness between about 1 and 2.5 microns.

37. The read-write head described in claim 30 wherein said pedestal has a cross-sectional area that is between about 10,000 and 15,000 sq. microns.

38. The read-write head described in claim 30 wherein said write coil generates heat at a rate between about 4 and 15 milliwatts.

39. The read-write head described in claim 30 wherein pole protrusion due to thermal expansion is less than about 10 Angstroms.